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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,265	04/01/2004	Siu Wing Or	007198-589	8106
21839	7590	03/08/2006	EXAMINER	
BUCHANAN INGERSOLL PC (INCLUDING BURNS, DOANE, SWECKER & MATHIS) POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			LAM, THANH	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

5/1

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/814,265	OR ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Thanh Lam	2834	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 14-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see Remark, filed 12/23/05, with respect to the rejection(s) of claim(s) 1-13 under Li et al. have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Bartlett.

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "concentrated zones" "polymer matrix" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

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application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Bartlett et al. (US 3401377).

Regarding claim 1, Bartlett et al. (see figs. 1-14) disclose a magnetoelectric element including at least one set of alternative piezoelectric layer (32) and magnetostrictive composite layer (34), wherein: the magnetostrictive composite layer includes at least one magnetostrictive material dispersed in first concentrated zones (44) within a first polymer matrix (as a common lines), wherein all of said concentrated zones are orientated along a first direction.

Regarding claim 2, Bartlett et al. disclose the magnetostrictive material is a rare-earth-based alloy.

Regarding claim 3, Bartlett et al. disclose the rare-earth-based alloy is selected from the group consisting of terbium-dysprosium-iron alloy (Terfenol-D), gallium-iron alloy (Gafenol) and samarium-dysprosium-iron alloy (Samfenol-D).

Regarding claim 4, Bartlett et al. disclose the first polymer matrix is made of a first polymer selected from the group consisting of thermosetting polymer and thermoplastic polymer.

Regarding claim 5, Bartlett et al. disclose the piezoelectric layer is selected from the group consisting of piezoelectric polymer and piezoelectric composite.

Regarding claim 6, Bartlett et al. disclose the piezoelectric polymer is selected from the group consisting of polyvinylidene fluoride (PVDF) polymer, and polyvinylidene fluoride-trifluoroethylene copolymers.

Regarding claim 7, Bartlett et al. disclose the piezoelectric composite includes at least one piezoelectric material dispersed in second concentrated zones within a second polymer matrix, wherein all of said concentrated zones are orientated along a second direction.

Regarding claim 8, Bartlett et al. disclose the piezoelectric material is selected from the group consisting of barium titanate ( $\text{BaTiO}_3$ ), lead zirconate titanate (PZT), lead magnesium niobate-lead titanate (PMN-PT) and lead zirconate niobate-lead titanate (PZN-PT).

Regarding claim 9, Bartlett et al. disclose the second polymer matrix is made of a second polymer selected from the group consisting of thermosetting polymer, thermoplastic polymer, polyvinylidene fluoride (PVDF) polymer and polyvinylidene fluoride-trifluoroethylene (PIVDF-TrFEI) copolymer.

Regarding claim 10, Bartlett et al. disclose a least one field generator for generating a magnetic field such that the magnetoelectric element is positioned in the magnetic field.

Regarding claim 11, Bartlett et al. disclose the field generator is an invariable field generator.

Regarding claim 12, Bartlett et al. disclose including a second variable field generator to generate a variable magnetic control field.

Regarding claim 13, Bartlett et al. disclose the field generator is a variable field generator to generate a variable magnetic control field.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Lam whose telephone number is (571) 272-2026. The examiner can normally be reached on t-f 9-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E. Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thanh Lam  
Primary Examiner  
Art Unit 2834

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